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No. 79. N. SER.] NOVEMBER, 1861. [No. CCXXXVII.

THE PHYTOLOGIST.

A BOTANICAL JOURNAL.

Ὡς ἐμεγαλύνθη τὰ ἔργα σου, Κύριε!—πάντα ἐν σοφίᾳ ἐποίησας.

PSALM. *civ.* 24.

Benedicite universa germinantia in terra Domino; laudate et superexaltate EUM in secula.—*Hymn. iii Pueror.* v. 76.

LONDON:

WILLIAM PAMPLIN, 45, FRITH STREET, SOHO.

J. E. TAYLOR, PRINTER, LITTLE QUEEN STREET, LINCOLN'S INN FIELDS.

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NORFOLK AND SUFFOLK BOTANY.

On the Botany of the Borders of Suffolk and Norfolk, near the Source of the River Waveney. By C. J. Ashfield.

On the 13th of September, 1861, being then on a visit in the neighbourhood, I went on a botanical expedition to the locality named in the title of this article; and the following account of the success I met with, will probably not be unacceptable to the readers of the 'Phytologist.' The chief scene of my investigations on the occasion referred to, was a considerable tract of marshy and fenny land, in some places tolerably dry, and in others abounding in pools of water, from a few inches to several feet in depth, known by the name of Lopham Fen, and situated partly in Norfolk and partly in Suffolk.

The rivers Waveney and Little Ouse owe their origin to two copious springs which rise in the neighbourhood, and the former river runs eastward to Yarmouth, and the latter, westward to Thetford and Lynn; and both form the boundary of Norfolk and Suffolk. On the banks of these streams, Lopham Fen is situated. The spot is a few miles westward of Diss, in Norfolk, where there is a station on the Eastern Counties Railway.

The route I took is as follows:—I left the railway at Mellis, which is the next station to the south of Diss, and a walk of about five miles from thence, through portions of the villages of Mellis, Burgate, Wortham, and Redgrave, brought me to the Fen.

Before I enumerate the floral treasures I discovered in the latter place, I must devote some space to the mention of certain noteworthy plants, which are to be met with on the way thither.

I must premise, that I have been well acquainted with the whole district for many years, and that although I did not find quite all the plants mentioned, in the late occasion, yet I have seen most if not all of them growing in the places named, at some time, and have in my possession dried specimens of all of them except one or two.

The first plant I have on my notes is *Rosa rubiginosa*, of which there are several specimens in the hedges on each side of the road to Burgate; indeed, it is anything but an uncommon plant in the district.

BRITISH MUSEUM

A short distance will bring one to the road leading to the Glebe Farm, belonging to the Rectory of Burgate; and in the field next the road may be found an abundance of *Habenaria viridis*, while in the pasture-field beyond the farm-house, and also in the field adjoining to and south of the Rectory garden I have frequently found *Ophrys apifera*.

After passing the Rectory, the road leading to Burgate church is shortly reached; and I should here advise a divergence from the direct road to the Fen as far as Burgate wood, which is situated a little beyond the church, and contains many scarce and interesting plants.

One of the chief of these is *Pulmonaria officinalis*, which is tolerably plentiful, and, I should say, certainly wild. It grows on the left of one of the principal openings through the wood; I found it in the same place as much as twenty years ago, and also during my late visit.

The greatly lamented Professor Henslow does not include this plant in his 'Flora of Suffolk,' and, indeed, gives few or no habitats of plants in this part of the county. I fully intended to write to the Professor relative to the *Pulmonaria* and two or three other Burgate plants; but the news of his death prevented my doing so.

Neottia nidus-avis, *Melampyrum cristatum*, *Scutellaria galericulata*, *Habenaria bifolia*, *Paris quadrifolia*, *Peplis Portula*, *Lythrum Salicaria*, and many other plants will, at the proper seasons, reward a search of Burgate wood.

There are several ways from the wood to Wortham Green, across which the road to the Fen passes. By the direct road from Mellis to Wortham, *Sison Amomum* is frequently to be met with; indeed, it is very general here, and is a common weed in the Rectory garden at Burgate. *Convolvulus sepium* and *Humulus Lupulus* are very frequent and graceful ornaments of hedges in Burgate. *Ononis arvensis* is abundant by the side of the road near Wortham Green. *Sagina nodosa* grows on the right-hand side of the Green; and *Potamogeton densus* and *Hydrocharis Morsus-ranæ* are abundant in the same locality. Further on, in a hedge to the left, *Tamus communis* and *Bryonia dioica* are frequent, and *Verbascum Thapsus* is not otherwise.

After leaving Wortham Green, *Calamintha Clinopodium* and *C. officinalis* (*C. acinos*, in a cornfield near the Fen) are com-

mon on hedge-banks on each side of the road, and in the hedges *Evonymus europæus* is frequent. On a bank to the right, about halfway between Wortham Green and Redgrave church, I found a few specimens of *Dipsacus pilosus*, which plant also grows by the side of another road in the same neighbourhood. In Redgrave churchyard grow *Galium verum* and *Salvia verbenaca*, and in the immediate neighbourhood is an abundance of that handsome plant, *Verbascum nigrum*.

Before leaving the neighbourhood of the church, I would suggest that the botanist forsakes his particular avocations for a few minutes, for the purpose of inspecting the interior of the building, which contains two such monuments as few country churches can boast: one of them is to the memory of Sir Nicholas Bacon (the Premier Baronet) and his wife, and the other to that of Chief Justice Sir John Holt; both former owners of Redgrave Hall. Continuing along the road beyond the church a short distance, brings one to a footpath on the right, which leads directly through several fields to the Fen. In these fields the following plants are to be met with:—*Orobanche minor*, *Cichorium Intybus*, *Reseda Luteola*, *R. lutea*, *Sarothamnus scoparius*, *Carduus nutans*, *Scabiosa arvensis*, *Trifolium procumbens*, *T. arvense*, *Hypericum*, several kinds, *Linaria vulgaris*, and *Echium vulgare*. *Rosa rubiginosa* is very plentiful in a hedge bordering on the Fen.

Arrived on the Fen itself, the first plant which attracts one's attention, at this season especially, is *Parnassia palustris*, which is abundant there. Bearing to the right from the spot where I entered the Fen (on the side nearest to Redgrave church), and coutinuing two hundred yards or so, and at a short distance from a small fir plantation, I found several plants of the Orchid family in an immature state, which was, doubtless, either *Malaxis paludosa* or *Liparis Loeselii*. I have heard that the latter plant has been found in this district. On the border of the fir plantation alluded to, I found a quantity of a plant of the Aster tribe, very much resembling, in its foliage and mode of growth, the Michaelmas Daisy of the gardens, the blossom being purple with a yellow disk. The plant has every appearance of being wild, and I found it in the same place some fifteen years since; it is not described in any botanical work to which I have referred. I will not particularize the localities in which I found the other Fen plants, as they were distributed generally either in the pools or

about their margins, or in the two rivers, or on the heathy portions of the Fen.

The plants which I noted down were the following :—*Cladium Mariscus*, frequent; *Schœnus nigricans*, very abundant; *Lemna*, the four British kinds; *Chara hispida, Menyanthes trifoliata, Myriophyllum verticillatum, Rumex Hydrolapathu ı, Lythrum Salicaria, Alisma ranunculoides, Hydrocharis Morsus-ranæ, Hottonia palustris, Sparganium ramosum, Samolus Valerandi, Calluna vulgaris, Sium angustifolium, Eupatorium cannabinum, Scabiosa succisa, Hydrocotyle vulgaris, Epipactis palustris, Comarum palustre, Lycopus europæus, Pinguicula vulgaris, Ranunculus Flammula, Potamogeton*, several kinds, but these were mostly too far decayed to distinguish them; *Utricularia vulgaris* was plentiful, and *U. minor* equally so, *Anagallis tenella, Drosera rotundifolia, D. longifolia*, (I am not quite sure whether *D. anglica* is there or not,) and *Œnanthe Lachenalii*. These are all that I found on my late visit to Lopham Fen. I have no doubt that a botanical expedition to the locality earlier in the season would be amply rewarded. I believe several of the Orchid family are to be found there. I gathered the pretty little *Genista anglica* there some years since, and I have seen a specimen of *Lysimachia vulgaris* which came from thence.

A walk through the beautiful Park of Redgrave would agreeably vary, though somewhat lengthen, the return to Mellis station; but the gratification of seeing the fine old Oaks which abound in the Park, would alone, in my opinion, compensate one for the extra exertion. The way to the Park is opposite to Redgrave church.

In conclusion, I may state that the following are some of the scarcer plants to be found in the parish of Burgate :—*Ophrys muscifera, Orchis pyramidalis, Erigeron acris, Senebiera Coronopus, Orchis conopsea, Spiræa Filipendula, Erysimum cheiranthoides, Hottonia palustris, Lithospermum officinale, Galeopsis Ladanum, Linaria minor*, and *Caucalis nodosa*. *Sambucus Ebulus* some time since grew in Burgate churchyard, but I believe is now lost there. I have a specimen of *Delphinium Consolida* marked "Wheat-field, Mellis, Suffolk, September, 1841;" and another of *Conyza squarrosa*, marked "Hedgebank, Mellis, Suffolk, July, 1841." *Hottonia palustris* grows more luxuriantly, and with more numerous whorls of blossoms, in pits about Mellis Green,

than I have ever seen it elsewhere. *Daphne Laureola* grew in a hedge by the side of the road from Mellis to Burgate some years since, and probably grows there still, although I did not observe it on the occasion of my late visit. It had every appearance of being wild in the locality referred to.

Preston, October 2nd, 1861.

LIBBARD'S-BANE.—LEOPARD'S AND OTHER "BANE PLANTS."

Doronicum Pardalianches.

Mr. Gissing, in his note in the 'Phytologist' for March, says it is customary with nearly all British botanists to consider the *Doronicum* as alien to this country; and he speaks of one place, near Bewdley in Worcestershire, which "is some distance from a house, but in conveying manure to fields or meadows, seeds of garden plants may be taken to very unlikely places for garden plants to grow." In this habitat an escape from a garden (in the true sense) it certainly is not; and he then refers to a passage in Ben Jonson's 'Masque of Queens,' 1609, and quotes some lines in which *Libbard's-bane* is noticed with other wild plants, and hence infers that *Libbard's-bane* may be properly termed a wild plant.

I see nothing unreasonable in this inference, but am inclined to agree with Mr. Gissing; and I would ask why, instead of its having been cast out of the garden to take its place in the field, it may not have been taken out of the field to be cultivated in the garden.

If so many of the seeds of our garden plants have been so cast out with refuse and manure into the fields, I should like to know how it is that there are so few of the garden plants growing in the fields. The process has been, in my opinion, *vice versâ*; for if all plants were originally what are termed wild plants (or plants formed to grow naturally without particular cultivation), the cultivation of them would be more likely to produce our garden plants, than the garden plants cast out to produce wild plants. Take for instance the Celery, the Spinach, Beet, and many others, which in a wild state being found palatable, would attract

the attention of man to their greater care and cultivation, by which they would become increased in size and flavour; and I doubt not that if the power of cultivation were arrested, these plants would fall back into their wild state; but I must leave the solution of this to wiser heads than mine.

I give however, for the benefit of the curious, some information from old writers on this plant, which may aid in the decision of the question. In Du Bartas' 'Divine Weeks,' translated by J. Sylvester, I find the following lines, in his notice of poisonous plants:—

> "Only the touch of *choak-pard** aconite
> Bereaves the scorpion both of sense and might."

This plant was by some of the old writers called *Aconite*, as well as *Libbard's-bane*. Cole's Dictionary says, "Libbards bane, *Aconitum*." Dr. William Turner (who has received such ample justice in the 'Phytologist,' see "Chapters on British Botany") has the Libbard's-bane, of which he says, "The herbe that hath been taken for Libbard's-bane groweth plenteously beside Morpeth in Northumberland, in a wood called Cottingwood."

In Topsell's 'History of Four-footed Beasts,' under the description of Panther, he says, "There is a kind of Henbane which is called *Pardalianches*, or Libbard's-bane, which the inhabitants of Pharnacus and Mount Ida were wont to lay in the Mountains for the destroying of Leopards, Bardols and Panthers." See Leopard's-bane in Gerarde's History of Plants, which he calls *Doro-*

* I find in Nares's 'Glossary,' edited by Halliwell and Wright, the following:—

> "*Choak-wort, a Plant.*
> "The Libians called it Reena, which implies
> It makes them dye like birds 'twixt earth and skyes;
> The name of Choak-wort is to it assigned,
> Because it stops the venom of the mind."
>
> *Taylor's Works*, 1630.

In the same work is given "Choak Pear," a coarse kind of pear; and the author refers to Lilly's 'Euphues and his England,' 1623,—"instead of a pill to purge his hot blood, he gave him a choke pear, to stop his breath," etc.

There is also "Choke-plum, a similar plum," which in Heywood's 'Spider and Flie' is called a choking "choke plum."

The description of Choke-pear in the Glossary is not satisfactory; if the authors had referred to Parkinson's 'Orchard,' they would have found the following:—"The choke-pears and other wild pears, as they are not to furnish our orchard, but the woods, forests, fields, and hedges, so we leave them to their unknown places and to them that keep them and make good use of them."

ronicum, and says, "Of this plant there be sundry kinds, whereof I will touch four;" and the figures of the plants are given. He also adds, that he had two kinds growing in his garden, one of which, "Great Leopard's-bane, *Doronicum majus officinarum*, has been found and gathered in the cold mountains of Northumberland by Dr. Penny, lately of Lordon, a man of much experience and knowledge in samples, whose death myself and others do greatly bewail."

Was this *Doronicum* which grew on the cold mountains of Northumberland, an outcast from the garden?

S. B.

BOTANY OF SPAIN.

A Few Days' Botanizing in the North-Eastern Provinces of Spain, in April and May, 1860.

No. III.

From Valencia to Madrid we travelled all the way by railroad, and had no opportunity of botanizing, except an hour's walk at the point where the Valencia branch meets the Alicante line. This point is Almansa, in the kingdom of Murcia, and the railway-station is in the very field of battle, where the English arms sustained one of the few defeats they underwent in the war of Marlborough and Queen Anne. To write the name Almanza is in every way a mistake; it is spelt with an *s*, and that letter in Spanish is never sounded like *z*. The shabby-looking little country town, which I only saw from outside, is still, probably, much what it was then. The adjacent country was mostly, at this season, in a freshly-ploughed state, and my botanizing was limited to a strip of ground between two lines of cultivation. There, however, I found *Adonis autumnalis*, *Sisymbrium Irio* and *Sophia*, *Erysimum perfoliatum*, a *Camelina* (I believe *sylvestris*), *Hypecoum procumbens*, a single plant of another *Hypecoum*, *H. pendulum*, the curiously podded *Enarthrocarpus arcuatus*, and the fine dark-coloured Poppy, *Rœmeria hybrida*. It is remarkable (and could scarcely have happened at any season but early spring) that all the plants I saw were of the three neighbouring families, *Ranunculaceæ*, *Papaveraceæ*, and *Cruciferæ*.

While at Madrid I did not botanize; the time we passed there was occupied with the town itself, and especially its almost unrivalled picture-gallery, which they who have not seen are unacquainted with one of the two great schools of painting of the world. The neighbouring country is a treeless and bushless expanse of corn—a uniform green in spring, a melancholy stubble in autumn—comprising the lofty plateau of Castille, of which the mountainous swell has neither the variety of hills nor the imposingness of a real plain. It is as unpromising to the botanist as it is unattractive to the lover of nature, to whose eye everything about the capital of *todas las Españas* is wearisome, save at the few points from which he can look over the north edge of the plateau, across a broad valley, to the snowclad mountains of Guadarrama, by the blasts from which sentries are said to have been frozen to death at the gates of Queen Isabella's palace.

My next botanizing was in a walk in the dusk near Guadalaxara, the place where the railway from Madrid towards Zaragoza at that time terminated; it has since been extended further. This little town is made imposing by the vast château of the Mendozas, a building which tells of Spain in what are called her great ages, being in reality the ages by which she was ruined. The only new plant which met my eye was *Reseda undata*, now identified with *R. alba*, a plant of our gardens, sometimes found in England as an escape from culture, to me indissolubly associated with the place where I first saw it, the ruins of Nero's Golden House.

I was more successful at Alcolea, the small village mentioned in my former paper, halfway between Guadalaxara and Calatayud, the first considerable town in Aragon. The plants which were here in flower, were those of a much earlier time of year, owing to the great elevation of the plateau on which, though now drawing near to its eastern boundary, we still were. Though it was the 1st of May, *Genista scorpius* (which near Avignon begins to flower in February) had not yet expanded its buds. *Erysimum perfoliatum* also, was not yet in flower. *Hutchinsia petræa*, the plant of St. Vincent Rocks and Eltham churchyard, was there; *Potentilla verna*, another Clifton plant; two Crucifers which grow near Rome and flower in March; *Arabis verna* and the less beautiful *Calepina Corvini*; another *Arabis*, probably *ciliata*; two *Veronicæ* of the earliest spring, *hederæfolia* and *tri-*

phyllos; an *Alyssum*, new to me, which I believe to be *A. perusianum*, a plant noted in the 'Flore de France,' with only one habitat (in the Eastern Pyrenees); *Ceratocephalus falcatus*, formerly classed as a Ranunculus, whose small flower gives birth to an oval head of scythe-shaped carpels, sometimes equalling in dimensions all the rest of the plant; and last of all, abounding among the young corn, a plant of the Order *Primulaceæ*, with a small bright flower sunk in the hollow of a very large calyx, which I did not at first see to be a lowland species of the highland genus *Androsace*; it is *A. maxima*, which I found again at Zaragoza, and the seeds of which are said in the country to be edible. Of plants not in flower I noted only a *Euphorbia* and the formidable Thistle *Picnomon Acarna*.

From Zaragoza, the prosperous capital of a backward province, noted for its glorious siege and for its two splendid cathedrals, I made a successful herborization. The immediate vicinity contains abundance both of waste and cultivated land, dry rocky garrigue, and low arable, fertilized by water tumbling in cascades from sluices in a broad canal carried along a very high embankment. Of plants already mentioned I noted *Rœmeria hybrida*, *Fumaria spicata*, *Mathiola tristis*, *Lepidium Draba*, *Sisymbrium obtusangulum* and *Irio*, two *Helianthema*, *Genista Scorpius*, and I believe *Calycotome spinosa*, *Hippocrepis ciliata* and *comosa*, *Vicia triflora*, *Paronychia argentea*, *Helichrysum Stœchas*, *Thymus vulgaris* (a variety with a lemon scent), *Plantago Lagopus* and *albicans*, *Mercurialis tomentosa*, *Asphodelus fistulosus*, and a small variety of *A. ramosus*. I have hardly anywhere seen *Ranunculus repens* so magnificent. The following were new to me, in Spain at least:—an Adonis, I believe *A. microcarpa*; *Papaver hybridum* in profusion; the richly-coloured *Glaucium corniculatum* (otherwise *phœniceum*), a plant also of Avignon; a cruciferous siliculose plant of dried-up appearance, not unlike in aspect to an advanced state of *Alyssum campestre* or *calycinum*, but which proved on examination to be *Berteroa incana*; a tall *Reseda* allied to *lutea*, I believe *R. fruticulosa*; to *Hippocrepis ciliata* was added a larger species, with pods similarly jointed and scooped out, *H. unisiliquosa*; the spreading *Hedypnois polymorpha*, with its clumsy club-like peduncles; the red-flowered and downy-coated *Cynoglossum cheirifolium*, one of the handsomest of its tribe; a fine dark-flowered *Teucrium*, not in the French Flora,—I made it

out to be *T. thymifolium*; lastly, a tiny grass, with a round, rather prickly head, *Echinaria capitata*.

At Lerida my botanizing was limited to a single field, but in that small space (besides *Alyssum calycinum* and the beautiful *Anchusa italica* of our gardens, a common cornfield plant in Spain and all over southern Europe as high up as Burgundy on the east and La Vendée on the west) I found four plants which I did not see elsewhere in Spain; two species of Silene, *S. conica*, and the rarer, more stately, and larger-flowered *S. conoidea*; a less handsome, not to say ugly, Boragineous plant, *Nonnea ventricosa*, one of the roughest of its rough tribe, without the usual lustrous beauty of their flowers; and the rather vulgar-looking sister of an otherwise most elegant race, *Malcolmia africana*.

Between Lerida and Tarragona I saw from the diligence the following plants, scattered in abundance over the country:—*Rœmeria hybrida, Lepidium Draba, Cistus* (if I mistake not) *umbellatus, Ulex parviflorus, Convolvulus althæoides, Cynoglossum cheirifolium, Mercurialis tomentosa*, a Gladiolus, and the blue *Aphyllanthes monspeliensis*. To these I will subjoin the following, which seemed universal in the parts of Spain which I have botanically visited:—*Adonis autumnalis, Lychnis vespertina, Agrostemma Githago, Vicia sativa, Scandix Pecten-Veneris, Maruta Cotula, Podospermum laciniatum, Hieracium sylvaticum*, or some of the many species (or supposed species) allied to it, *Anchusa italica, Lycopsis arvensis, Lithospermum arvense* and *officinale, Plantago Coronopus* and *lanceolata*. And here ends Spanish botanizing, with the exception of a visit to Monserrat, and two days at the end of May in the Spanish Pyrenees, of which I will endeavour to give some account in a future number of the 'Phytologist.'

THE RESULTS OF A DAY'S BOTANIZING NEAR METHVEN, PERTHSHIRE.

By Francis B. W. White.

First, near the village of Pitcairn, *Campanula rapunculoides* grows by the roadside, where the hedges are festooned with *Solanum Dulcamara, Vicia Cracca, Lathyrus pratensis*, and other climbing plants.

In a wood near the river Almond, grow the following rare species, viz.:—*Campanula latifolia, Carduus heterophyllus, Circæa lutetiana, Epilobium angustifolium, Carex sylvatica, Polypodium Dryopteris, Asperula odorata, Solidago Virgaurea,* and other interesting species.

Rosa rubiginosa, R. tomentosa, and *R. arvensis,* are not uncommon in the hedges and on the bushy, furzy, open wastes.

Saxifraga aizoides fringes the margins of the rills that descend from the heights into the river.

Mentha sylvestris, Hypericum hirsutum, H. humifusum, Gentiana campestris, Agrimonia Eupatorium, Calamintha Clinopodium, Linaria vulgaris, Sedum Telephium and *S. reflexum* out of reach, etc., grow by the roadside not far from Methven, and several Orchids in open parts of the same locality; the chief of these were *Habenaria chlorantha, H. bifolia,* and *Gymnadenia conopsea.* The rocky parts were adorned with the pretty *Antennaria dioica.*

The bogs afforded *Potamogeton oblongus?* and *P. natans,* also *Triglochin palustre, Veronica scutellata, Equisetum sylvaticum?, Narthecium ossifragum, Sedum villosum, Hydrocotyle vulgaris, Comarum palustre, Carex curta* and *C. ampullacea, Alisma ranunculoides, Drosera rotundifolia, Sparganium simplex* and *S. ramosum,* and other rarities too numerous for entry.

The Ferns which I observed in addition to that already noted, were *Lastrea Oreopteris, L. aculeata,* var. *lobata,* and *Cystopteris fragilis.*

After a long walk, in weather which did not increase the pleasure of being on unsheltered wastes, or in the rocky channels of mountain torrents, or under the drip of Scotch Firs, Elms, and Larches, I reached home thoroughly tired; but well pleased with the result of my day's botanizing.

Perth, July 10th, 1861.

BOTANICAL LETTERS FROM ARGYLESHIRE.

By JAMES LOTHIAN.

No. II. LIMECRAIGS AND CROSSHILL.

Sir,—To a resident botanist, or a party arriving in Campbelltown on a botanical tour, the above localities form an easily reached

and pleasing short excursion, well suited for an evening's exploration after the arrival of the steamer from Glasgow. The party can get refreshed at the White Hart Hotel or Argyle Arms, after which they can easily search those localities in two or three hours.

Leaving town by Argyle Street and Killkerran road, ten minutes will enable them to reach Limecraigs, an old residence of the Argyle family. Shortly after entering the avenue, the mansion, an old square building, appears through the fine old trees which line both sides of the approach, meeting overhead like a Gothic arch. The house is occupied as a shooting-lodge by a sportsman, who possesses the extensive range of shooting to the rear, extending about ten miles southwards. The lands surrounding the house are laid out in pasture, grazed by flocks of sheep and cattle, which give animation to the scenery. Surrounding the house there are fine old specimens of trees, and throughout the park their huge trunks and beautifully formed heads, and rich tints of foliage, are objects of attraction. To one of these I must more especially direct the attention of the botanical wanderer. This specimen stands at the end of a small bridge in close proximity to the house, exhibiting the most remarkable natural union of two branches that has come under my own observation. The tree in question in its early stages has evidently grown forked, that is, with two leading top branches, and after growing in this manner for a series of years, one of them appears to have started away ahead of its companion; the latter, as if seeing that it was to be left behind, has turned its head inwards and ingrafted itself with its neighbour, and so completely has it effected this, that no mark or scar appears giving the least indication of how it has been effected. There it stands, forming a complete ellipse of some two yards long, with the union as perfect above as at the fork below. Probably another similar instance is not to be met with in the kingdom, and most certainly not in Kintyre. It is one of those freaks of Nature which seem to put Philosophy to defiance. Immediately in front of the mansion there is a fine formed specimen of variegated Sycamore, representing very completely the class of round-headed trees.

A short distance from the house, away to the rear, as you cross the park in the direction of Crosshill, you reach a belt or small plantation of Oak, Firs, etc. There, during the time of flowering,

I have met with *Lysimachia nemorum*, *Geranium Robertianum*, *Aspidium Filix-mas*, *Marchantia polymorpha*, *Chrysosplenium oppositifolium*, *Scabiosa succisa*, abundantly. The *Oxalis Acetosella* and the *Hyacinthus nonscriptus* grow at this spot in great profusion; and among the dense blue masses of it, I have year after year picked up here the *H. nonscriptus alba*. Three species of the genus *Rubus* appear very abundant, viz. *R. corylifolius*, *R. fruticosus*, and *R. suberectus*. To these I may add the *Ranunculus gramineus*,* *Spiræa Ulmaria*, *Iris Pseudacorus*, *Myosotis palustris*, *Stellaria glauca*, and several of the Grasses.

Crossing the boundary of Limecraigs policies, Crosshill is reached. It is a range of fine green knolls, partly covered with natural pasture, and part of it has been subjected to the plough. Ascending from the north side, as you stand for a moment to draw your breath, the first object that attracts the eye is the splendid blaze of the Foxglove, *Digitalis purpurea*, which grows in great masses here; where also upon one or two occasions I have met the *D. purpurea*, var. *alba*. The *Viola canina*, *Polygala vulgaris*, several varieties, the *Pinguicula vulgaris*, the yellow Primrose, *Jasione montana*, *Tormentilla repens*, *Potentilla reptans*, *Galium verum*, *G. saxatile*, *Orchis maculata*, *Lotus corniculatus*, *Plantago lanceolata*, and *P. maritima*, are everywhere, and as you reach the top, the *Alchemilla vulgaris* and *A. arvensis* are found, and *Linum catharticum* in great abundance.

On a fine summer evening, this is a spot, fragrant with the wild Thyme, where the lover of Nature and her manifold charms may enjoy a rest and a beautiful bird's-eye view of the town of Campbelltown, its harbour and shipping, and the country around it; as well as a fine distant view of Arran, *Islay*, Jura, with her lofty Pass, Mackrehanish bay, and a part of the Atlantic Ocean. As he sits gazing around him with pleasure,—if poetical, with rapture,—he may not be aware that he sits on the top of a mine. A tunnel passes right through the centre of this knoll, through which the water supply of the town is conducted from a large reservoir, or rather a lake, situated in the deep green glen behind him, by which I may now conduct you.

Descending the south side of Crosshill to the reservoir, im-

* Will our obliging correspondent send to 45, Frith Street, Soho Square, London, a few specimens of this *Ranunculus*, which has been often reported as a British plant? Has any reader ever seen an example collected in these isles?

mense masses of the *Ulex europæus* are everywhere, as well as the Sloe Thorn, diffusing the fragrant perfume of its snowy blossoms on every breeze. Trout are leaping in the lake, and various kinds of water-birds are flying about. Reaching the east bank, which is an artificial one, a deep glen at the south end of the tunnel meets the eye, where a delicious little spring flows from the base of the limestone rock. Here the *Prunella vulgaris* is very abundant, and where I have also found the *P. vulgaris alba*; on the marshy banks of a rivulet that flows down through Knockbay glen, are found the *Caltha palustris* and several species of the more common Ferns, *Lychnis dioica*, etc. Ascending from this glen, the rambler can proceed a few hundred yards southwards and take a homeward direction by Knockbay Farm; on his way he would meet with *Ajuga reptans* and *Anagallis tenella* abundantly. He may deck his cap with the badge of the clan M'Donald, *Erica cinerea*, and his breast with the fragrant Honeysuckle, found here in dense thickets. He shortly reaches Killkerran road, when a quarter of an hour will bring him to his quarters.

But I must close for the present. I am afraid I have encroached upon your time and space, beyond what my vasculum of wild-flowers will warrant, on this occasion. I hope my next will be better filled, and that I may be able to inform you of a greater and a rarer catalogue of our local rarities, which while we search for them and study our beautiful wild-flowers, may we be made better and wiser; may we ever sing with the bard,—

> "Instruct us, Lord,
> Thou Father of the sunbeam and the soul,
> E'en by the simple sermon of a flower,
> To live to Thee."

KENTISH BOTANY.

Walk from Folkestone to Lydden Spout, under the Cliff by Eastwear Bay, and back to Sandgate, Shornecliff, Seabrooke, and Hythe.

The morning of the 7th of September was very fine, and soon after six o'clock we were abroad, and wending our way back again by the martello towers, over the cliff to Eastwear Bay, retracing our steps to Lydden Spout, prepared to return over the ground which we had passed unprofitably the previous night.

On the undercliffs surrounding or enclosing Eastwear Bay, a most productive locality, we observed many of the plants which had been previously seen and collected in other parts of our journey, and we only report specimens of the following as actually collected, viz. *Juncus obtusiflorus, Iris fœtidissima,*—which to us bore no disagreeable smell, although its name denotes as much as if it stunk like asafœtida,—(the odour of that to which the smell of this plant is compared would have been anything other than offensive to our olfactory organs, for we had not yet broken our fast, and our digestive apparatus wanted some object whereon to operate: roast beef is not procurable in Eastwear Bay, nor roast mutton either,)—*Trifolium striatum,* and *T. medium:* the latter Professor Buckland demonstrates to be identical as a species with *T. pratense;* the learned Professor does not tell us on what evidence, axioms, or postulates his demonstration is founded; is it proved on *à priori* or on *à posteriori* principles?

Eastwear Bay also produced *Lithospermum officinale, Lactuca virosa,* and *Potamogeton oblongus* or *natans.* This fine aquatic was far beyond our reach; it might have been procured by swimming. Most of the remaining rare plants of this locality, and they are numerous, had been previously observed, except *Rosa rubiginosa,* which was scented at a considerable distance on this fine morning, when the dew hung long on the luxuriant vegetation of this undercliff. Here were also noticed gigantic specimens of *Hippophaë rhamnoides,* more than six feet high.

This locality will well repay the expense of a visit, in the month of June or in the beginning of July; we were here a couple of months too late. In ordinary seasons very little would have been seen worth collecting so late as the 7th of this month, but this year the weather and the state of vegetation were exceptional, and the vegetation of August was still existing in September.

On the face of the steep cliff, on our way to the Spout, *Brassica oleracea* again appeared, and in a fissure down which trickled a tiny rill, there was seen *Scolopendrium vulgare.* Ferns were by no means common in the course of our tour. At the base of the cliff *Papaver somniferum* appeared quite at home, very far from a cottage or garden, but probably not very far from a cornfield.*

* There is some cultivation on the cliff here and there, and we passed through a field which is not probably more than a mile from Eastwear Bay. We did not see *Papaver somniferum* during our long walk from Canterbury, through Sandwich,

There are no cottages under the cliff, but about a mile from the Spout there is the hull of a ship, removed a little distance from the sea, and fitted up for the abode of coastguardmen and their families.

On the shingle, not far from this semi-marine residence, some fine plants of *Cakile maritima* introduced themselves, and from these we replenished our vasculums. *Crithmum maritimum* was also plentiful, and within reach. About Eastwear Bay and the Lydden Spout the gathering of Samphire is not so formidable a process as it was on Shakspeare's Cliff in the days of good King Lear. There were no samphire-gatherers here but ourselves, and our wants were soon supplied; we had no occasion to risk limb or lith to procure all that was wanted for our purposes.

Near the Spout there were some plants of *Frankenia lævis*, well grown, barely in flower, just enough to enable us to state positively that the plant grows here. We spent half an hour looking for *Euphorbia Paralias*, which we could hardly have overlooked if it had been there when we were, and then we ascended the undercliff and gathered some large plants of *Orobanche caryophyllacea*, all quite withered. This rare Kentish plant is nearly as tall as *O. major*, and it was invariably found near *Galium Mollugo*; hence it was inferred, naturally enough, that it grows on the roots of the latter plant. This however we did not stay to determine, for our appetite reminded us that we had not yet breakfasted, and it was now eleven o'clock, and we had four good miles to walk before we could reach our hotel; therefore we left the *Orobanche*, ascended the four hundred and forty-four steps, inclined planes and all, reaching the top of the cliff in about fifteen minutes after we commenced the ascent by the steps.

Our nearest way to Folkestone was along the top of the cliff, across some fields to the Dover road, by which we entered this ancient town the second time, but the first time in broad daylight.

The situation of Folkestone is very similar to that of Dover, only the combe in which the former is built is not nearly so deep nor so extensive as that which contains the latter; or, in other words, the hills about Dover are considerably steeper and higher

Deal, and Dover, to Folkestone; but as it is a cornfield plant, it may possibly have tumbled or was blown over the cliff, as the Isle of Wight Stock may have been driven by the storms into the sheltered nooks where it grows.

than they are at Folkestone. The combe of Folkestone does not bear the deep basin-like form of that of Dover. The cliffs and entire scenery about the latter town are remarkably striking, unlike those of any other part of the south-eastern coast observed by the reporter.

Folkestone is certainly an enjoyable town, though not so agreeable as its more celebrated and better-known rival.

Our destination, on this the fifth and the last day of our botanical excursion, was from Folkestone to Hythe, through Sandgate, Shornecliff, Seabrooke, etc.

Our way was along the undercliff, which has now become less productive, in a botanical sense, than it was in the time of the Rev. G. E. Smith, who botanized here about thirty years ago. Enclosures and cultivation have produced this alteration. *Phalaris canariensis* was more plentiful here than in any part of our previous journey—one of the many proofs that the centre of its distribution is not where it is cultivated. *Petroselinum sativum* was well established on these steep banks; and *Tamarix gallica*, though probably planted here, throve amazingly. No shrub braves and endures the keen sea air better than this; few shrubs have a more handsome, bushy, and lively appearance. It is not only an ornament to the cliff, but it might be used as a nurseling or a protector for sheltering and raising more valuable but not so hardy shrubs and trees.

There is a small beach between Sandgate and its castle—for castles are plentiful in this part of the country, all built upon one plan or after one model; they are circular, like a stumpy cylinder, or a torso, *i.e.* a human figure deprived of its head, arms, and legs, the height of which does not much exceed its breadth. The martello towers are in proportion and figure not unlike a Stilton cheese, and they are not very ugly; but the proportions of Sandown, Deal, and Sandgate castles are exactly those of a double or thick Gloucester, the diameter is about twice the height. Let not the curious reader fancy that the south of England is ornamented and fortified with such noble erections as Windsor Castle, or even like the smaller castellated edifices of Aberdeenshire. These Kentish castles have no beauty to boast of; of their defensive or their offensive capabilities, the less that is said the better for them: for as picturesque objects they do not enhance the attractiveness of the coast scenery; their defensive capabilities

have never happily been proved by aggressive attacks. They however have their botanical uses, in marking off the coast into portions of moderate dimensions, and by their help localities are definitely described. Between Sandgate and Sandgate castle there is a pretty considerable portion of the raised beach well covered with grassy turf. Here were seen large forms of *Trifolium striatum*, and still larger examples of *T. ornithopodioides*. In most parts the latter is only a very diminutive plant; here it is at least a foot long. We have seen cultivated specimens as large as these, but we never saw the wild plant so large as those we collected at Sandgate. At the village of Sandgate we observed *Circæa lutetiana* not an uncommon species, but this was the first we met with it since setting out on our present botanical travels.

From Sandgate we ascended the cliff to Shorne, and along the brow of the hill, opposite the barracks and artillery-ground, we collected enormously large specimens of *Trifolium subterraneum*. These were at least three feet long, with stems not quite so thick as a goose-quill, but quite as thick as strong pack-thread. The plant was still growing; it had fruit at one end and flowers at the other; and if left long enough, and if the weather had been favourable, it might have rivalled the length of the *Sargassum*, the weed of the Gulf-stream, or in plainer terms, it might have gone forward from Shornecliff to Hythe, if it had met with no interruptions or accidents by the way.

At Seabrooke we met with our first and sole botanical disappointment, which was borne with considerable equanimity and firmness, even though our success on this our last day's botanizing had not been very decided.

We had long cherished the idea of seeing *Cyperus longus*, one of the rarest ornaments of Flora's brow, in the county of Kent. Seabrooke, its "unpromising warren-hills," Whiting Brooks with its "black boggy track," were all reached and satisfactorily identified. The graphic description of this district given by the reverend author of the 'Botany of South Kent,' had been read, reread, considered, and mentally digested so much and so intensely, that we could then have repeated it from beginning to end, long though it be, without missing a word, a stop, or a hyphen. We were now within reach of realizing our hopes of acquiring a treasure so long coveted and so much valued.

We ascended the hill's brow, and perceived a wood, small and picturesque enough, on our left, which we deemed likely to contain the precious prize; but, alas! further on and straight ahead two other copses or woods made their appearance, both of them in provokingly picturesque positions. We passed by the first-seen wood and went to those more remote, and found them both quite impenetrable. From these copses we went up to the farm-house on the brow on the left, and inquired for Whiting Brooks, the name of the depression where both the wood and the copse, so well defined by our reverend guide, are situated. We were directed back to the wood and copse first seen when reaching the brow of the hill. The open boggy part of the wood we found, and everything corresponded to the description which we had carefully perused and studied till it hung to our memories like the burden of some favourite old ballad, or like a piece of good luck which only happens once or twice in a long lifetime. Everything was there except, *horresco referens*, "the tall, graceful *Cyperus*, spreading around its slender branches, tufted with chestnut spikelets, like a delicate exotic or miniature Palm, wandering from its native clime to adorn this secluded spot," was—what shall I say?—was, in dog Latin, *non est inventus*. Like weary, hungry pedestrians as we were, we left the secluded spot, *minus* the sweet Galingale, consoling ourselves with the assurance that we had found the place though not the plant, brooding over our disappointment, and speculating on the cause of our ill-success.

Between Seabrooke and Hythe we met abundance of *Salvia verbenaca*, one of the last of the plants to be recorded as the produce of this journey. It was plentiful on the roadside between Seabrooke and Hythe.

Next morning, before leaving for London, we strolled up the town into the churchyard, (not of Hythe, but of Folkestone, for the crowded state of the former compelled us to return a third time to Folkestone,) where several fine healthy plants of Henbane were growing about the tombstones on the east end, that nearest to the town. The esplanade on the cliff was just looked at, and the situation was much commended. The views from this part of Folkestone are very good and extensive. In front there is the sea; the downs are in the rear; on the left Shakspeare's Cliff, Eastwear Bay, and Folkestone Harbour; and on the west Hythe, Romney Marsh, and Dungeness.

This is probably a very healthy situation; for these houses on the top of the cliff have the benefit of the fresh and cool morning gale from the downs, and also of the sea-breeze which blows steadily from some point of the south during the day.

Thus at Folkestone ended one of the most agreeable and successful botanical excursions either of us ever had, though we were far from being novices in this way of holiday-spending and plant-seeking. Before commending to our readers particular parts of the country to their special notice, some observations remain to be made on certain species, especially in reference to their distribution.

It is assumed by some botanical observers whose opinions on the distribution of species are entitled to much deference, that certain plants are native to the valley of the Thames, which means that there is no suspicion of foreign origin or introduction attaching to them; and that others are only entitled to rank as denizens, which means that their claims are doubtful, or that they occupy a neutral position, or lie between the unsuspected and the suspected natives, like Mahomet's coffin suspended in the air between earth and heaven.

Mercurialis annua is plentiful in the valley of the Thames, both above and below London, and it was almost if not quite as abundant at and below Canterbury. This species passes muster as a native, though not frequent in England. In all these localities *M. annua* is associated with *Diplotaxis muralis*, and this latter plant is called a "denizen." The late Dr. Bromfield, in vol. iii. of the 'Phytologist,' o. s., p. 823, produced many reasons why *M. annua* should not be reckoned a true native.

This plant, the annual or French Mercury (see 'Phytologist,' o.s., vol. iii. p. 823), was profusely distributed by waysides, in cultivated places, as well as on rubbish and in gardens, in villages and towns in all parts of our route from Canterbury to Folkestone.

Another plant of cultivation which we found, it may be said, everywhere, is *Diplotaxis muralis*, probably long overlooked and mistaken for a state of *D. tenuifolia*. This plant is extending in all directions, and it appears, like several other species, to evince a special predilection for railways. Only the other day, September 18th, it was observed plentifully on the gravel adjoining the platform at Wraysbury station of the South-Western, London and Windsor line.

Reference has already been made to the Wallflower, which is extending itself about Dover, and though it has a decided preference for walls and rocks, yet on this coast, where there are neither of these habitats, it appears well contented with a humbler station. The Wallflower, in its choice of location, bears a considerable resemblance to *Diplotaxis tenuifolia*. This latter plant, like the Wallflower, prefers walls when they are within reach; and when they are not, it grows on the ground. At Dover, Southampton, and Chester, it looks particularly happy on walls, and about these towns it is not particularly abundant, except on walls and roofs.

Linaria purpurea and *Antirrhinum majus* prefer walls, but the former has been seen growing vigorously and increasing greatly in cultivated ground about Yarmouth, Isle of Wight, where walls are about as scarce as walls and hedges are on the South Downs, in the south-east of Kent. We have a specimen from sandy fields near Windlesham in Surrey. *Diplotaxis muralis* does not select walls for its habitat; about Wandsworth and Battersea walls are as common as cabbage-grounds once were, yet this species, unlike its near British relation, shows no preference for such places.

Sinapis nigra is exceedingly common in Kent, and it is not rare in some parts of Surrey, especially by the river Thames, near London. On the contrary, *Sinapis alba*, which is uncommon in Kent (we did not observe it in more than one place?), is frequent in the cultivated fields of Surrey. Perhaps botanical geographers will tell us why a plant, such as white Mustard, abounds in one county, and is scarce or almost absent from another lying exactly between the same parallels.

Common Parsley prefers walls and rocks, but it was frequently seen thriving well on the flat ground, where there were no rocks nor old crumbling rotten walls near it.

Fennel is almost universal in those parts of the county through which we passed. Near the sea it may be said to be universally distributed. It was quite at home in the fenny parts of our route, on banks about the ruins of Richborough, where it was particularly fine; and also on the chalk, where it was equally luxuriant and plentiful.

Several plants were quite unexpected where they were found. Among these may be named *Geranium pyrenaicum* near Wingham, *Polypogon monspeliensis* in the salt-marshes near Sandwich or

Pegwell Bay, close to the houses of the coastguard, and *Papaver somniferum*, which is plentiful in some cornfields in North Kent, and also on dike-banks in the Fens (eastern lowlands); in Eastwear Bay it seemed content with its situation at the base of the lofty cliffs.

Veronica Buxbaumii is extending its range. Its stations are increasing, and it follows from this increase of centres of distribution that its area is gradually increasing.

So much for the distribution of the plants seen in this excursion, about which some remarks appear necessary.

About the identification of species, all was accomplished that we expected. There were only two plants about which there has been any difference of opinion among British botanists.

The Dover Catchfly, *Silene nutans*, which was first observed at St. Margaret's, between Kingsdown and the South Foreland, is the first. This had flowered a long time, probably two months, ere we visited South Kent; but judging by the radical leaves of the plant, it seems to be nothing else but a very decided variety of the common form. It certainly is not the same as the Isle of Wight form, which we observed on the lofty cliff east of Sandown Bay, four years ago. This was one of the botanical doubts which were cleared up in our late journey.

The second is the Dover Statice. Two forms of *Statice spathulata* (like other notabilities it has a long array of aliases) have been known on the south-east coast, ever since the publication of the Rev. G. E. Smith's work on the plants of South Kent. The large form, which abounds between Kingsdown and St. Margaret's, differs very much in size and appearance from the form which is equally abundant in Eastwear Bay, and especially near the Lydden Spout. The plants of this variable species on the east of Dover, are, at an average, about two feet high, more or less. Those on the west of Dover, in the aforesaid localities, vary from a few inches to above a foot; say from three to fifteen inches. The large specimens on the east of Dover have many barren branches; and the small examples of this plant in and near Eastwear Bay have no barren branches. But there are numerous intermediate forms, which serve as connecting links between these two extremes, and show that these differences do not constitute a variety.

There are some parts of the coast, partly examined by us, which might be worth a more complete exploration at an earlier

part of the season; and there are certain parts, both of the coast and in the interior of this county, not visited by us, but which we are firmly persuaded would amply repay the labour of investigation.

Of the first class of localities, viz. on the coast traversed by us, that part of the undercliff between Kingsdown and St. Margaret's should be explored about Midsummer or at the beginning of July. The same may be said of the extensive undercliff of Eastwear Bay, which possesses greater variety of soil, and probably bears a richer Flora, than the cliff at Kingsdown, which is entirely formed of the débris of the incumbent chalk. That at Eastwear Bay possesses ponds, and has rills of fresh water trickling here and there down the cliff.

But besides these there is the shore, and the ditches of Romney Marsh, unexplored probably for a century. This would be a somewhat monotonous sphere of botanical labour, but it would not be entirely unproductive.

We observed no rare forms or species of *Atriplex*. At the first blush we imagined that we had detected *A. laciniata*, *A. rosea*, and *A. Babingtonii*. After a careful comparison, all the three above named were easily reducible under one description, viz. *A. Babingtonii*, with which description they all agreed passably well. *A. rosea*, as we called it, was a little more frosted than *A. Babingtonii*, while *A. laciniata* had its leaf a little more elongate and more toothed than either of the two other forms. Its stem differed entirely from what is called *A. laciniata* by Continental botanists.

There are also some inland localities celebrated in the annals of botany worth visiting, viz. Elham and its environs, especially the Roman road between Hythe and Canterbury. In woods or copses not very far from Hythe or Cranbrook, *Cyclamen hederæfolium* was said to grow, and it would be very gratifying to be able to confirm this tradition, for it is little more. If it had been found there in recent times, it would have been entered in the Rev. G. E. Smith's work on the plants of this district, which was within a few miles of his residence, or by the careful author of the 'Faversham Flora,' Mr. Cowell.

There is another rarity recorded as having been met with, by Mr. Oxendon, between Charing and Walmer, a rather indefinite locality. Charing is on a range of chalk hills some miles from

Ashford, which is very accessible by the South-Eastern Railway. See 'Phytologist,' N.S. vol. iii. p. 268.

These two rare plants, viz. *Cyclamen hederæfolium* and *Orchis hircina*, with other pickings, would well repay a journey to South Kent.

PLANTS NEAR TURVILLE, BUCKS.

In the 'Phytologist' for June last, your correspondent on the Botany of Burnham Beeches says,—"Buckinghamshire has the reputation of being rich in vegetable rarities," and he wishes some correspondent to make a note of them. I have not seen the Botanists' Guide for this county, and cannot say whether this notice of mine may be worth insertion, but such as it is I send it, that you may know what plants can be seen by any one who will walk three miles in this district, and use his or her eyes in looking for them. The country for some miles round this spot is on the chalk, and abounds in scenery of the most beautiful and picturesque character; high hills and long deep vales, mostly covered with beech-wood, intersected by cornfields, heaths, and pastures. Some of the valleys are from five to six hundred feet deep, very spacious, with gentle sloping sides, affording extensive views from the hills, but no streams run through them. In these fields and pastures I found in blossom the *Iberis amara* in great abundance; *Fumaria capreolata* spreading its full size; *Sinapis arvensis* covering broad acres with its golden blossoms; *Viola tricolor* plentiful; *Linum catharticum*, *Myosotis arvensis*, and *Spergula nodosa* in great abundance; *Reseda lutea* and *Tragopogon pratensis* (John Go-to-bed-at-noon) fast asleep; *Sanguisorba officinalis*, and *Poterium Sanguisorba*. In the woods grows the Columbine, *Aquilegia vulgaris*, which I now believe to be the plant which Izaak Walton called Culverkeys, and which one of our early poets, George Chapman, calls "a thankless flower." It was this flower Ophelia gave to the King of Denmark in her madness upon the death of her father Polonius. Near to this grows the *Pyrola media*, *Habenaria bifolia*, *Paris quadrifolia*, *Oxalis Acetosella* out of bloom, *Orchis maculata*, *Arctium Lappa* stout and tall, *Lysimachia vulgaris* plentiful, *Tamus communis*, *Bryonia dioica* (the English Mandrake), *Epipactis rubra*, *Viburnum Opulus*, etc. Mrs. Beisley gathered specimens of most of

the above. Some of the fields were glowing like burnished copper with the blossoms of the *Onobrychis sativa*, and the Heaths were profuse, with *Digitalis purpurea*, Furze, and wild Thyme. The hedges by the roadsides were enriched with Dog-roses, Honeysuckles, Clematis, and Cornel.

I must not forget to mention that on Turville Heath is an avenue of Lime-trees, a quarter of a mile in length, and which for magnitude and beauty I should say are unsurpassed.

This part of the county of Bucks borders on the eastern side of Oxfordshire.*

S. Beisly.

Review.

The Canadian Naturalist and Geologist, and Proceedings of the Natural History Society of Montreal. Montreal: B. Dawson and Son. London: Sampson Low and Co. No. I. No. II. No. III. No. IV. Vol. 6.

In this miscellany the first article of a botanical kind is an account of the *Cornus florida*, a little tree generally distributed through the United States, said to be of extreme beauty,—the neatest and showiest species of its genus. It is figured in the 'Botanical Magazine,' t. 526, and is probably not unknown to the nurserymen of the United Kingdom. This is a very good article.

The "Physical Geography of the Appalachian Mountain System" is an elaborate essay on the directions or bearings of this central chain, the elevation of its peaks, table-lands, the depressions of its valleys, gaps, etc.

Among the miscellaneous reviews there is one on the Botanical Society of Canada, or rather, an abstract of recent discoveries

* This part of the county appears to me to be situated between the bounds defined in the Act of Parliament of 23 Elizabeth, 1581, which prohibited cutting of wood and timber to convert into coal or other fuel for the making of iron, or iron metal in iron mills, within twenty-two miles from the City of London, or within twenty-two miles of the river Thames, from Dorchester, Oxon, downwards the said river; and it is worthy of remark that charcoal-burning is *now* carried on in the woods of this district.

communicated to that flourishing association. One of these is entitled "Seaweed as a Manure," an article that cannot be much known practically in Upper Canada, and cannot be expected to excite much interest; potash or its refuse, if there be any, would be more likely to rouse the attention of West Canadian farmers. The writer relates its utility in fertilizing the sandy hills of the east coast of Scotland. But the learned Professor must know that its application there is easy, because these sandhills (sand dunes, he calls them) are contiguous to the shore. It would be expensive to convey a bulky material like seaweed a distance of a thousand miles. Possibly the author intended that the phosphates and other manureal materials should be extracted before its conveyance to the Upper Province.

In the April number of this periodical there is a list of plants collected in the counties of Argenteuil and Ottawa in 1858, by W. S. M. D'Urban. This gentleman was five months in the district, and probably observed most of the plants growing there. His list is arranged systematically, and he prefixes an asterisk to the introduced or naturalized species.

The entire catalogue of phænogamous and cryptogamous plants observed by him during a residence of five months, consists of 362 species, viz. 276 of the former and 86 of the latter. A comparison of the species common to both Britain and America (Upper Canada) may be interesting to those who study the distribution and relations of plants, or to phytogeographers, as they delight to call themselves.

Among the 276 phænogamous plants of Canada enumerated in this list, there are 38 common to both Europe and America, viz. *Ranunculus Flammula, Caltha palustris, Actæa spicata, Cardamine hirsuta, Drosera longifolia, Oxalis Acetosella, Spiræa salicifolia, Agrimonia Eupatoria, Fragaria vesca, Epilobium angustifolium, Œnothera biennis, Circæa alpina, Ribes rubrum, Linnæa borealis, Viburnum Opulus, Erigeron canadensis, Vaccinium Oxycoccus, Andromeda polifolia, Pyrola rotundifolia, P. secunda, Monotropa Hypopitys, Utricularia vulgaris, Veronica scutellata, Prunella vulgaris, Scutellaria galericulata, Menyanthes trifoliata, Polygonum aviculare, Myrica Gale, Acorus Calamus, Typha latifolia, Sparganium simplex, Juncus tenuis, J. bufonius, Eleocharis palustris, Scirpus sylvaticus, Carex tenella, Agrostis vulgaris, Poa pratensis, Milium effusum.*

Besides these there are 22 introduced British plants, or they assumed to be such, viz. *Ranunculus acris, Capsella Bursa-pastoris, Silene noctiflora, Agrostemma Githago, Oxalis stricta, Trifolium pratense, T. repens, Achillea Millefolium, Leucanthemum vulgare, Tanacetum vulgare, Cirsium lanceolatum, C. arvense, Taraxacum Dens-leonis, Plantago major, Verbascum Thapsus, Galeopsis Tetrahit, Cynoglossum officinale, Chenopodium album, Polygonum Persicaria, Rumex Acetosella, Phleum pratense.*

Thus there are, it appears, 60 of the 276 phænogamous species in the Ottawa district, common to both hemispheres, either by nativity or introduction, or rather more than one-fifth, and fewer than one-fourth, are found growing spontaneously in both continents.

This is a large proportion of plants common to the two continents of Europe and America, and especially when it is considered that there is a wide ocean between them.

The number of Ferns and Fern allies recorded as found in this district is 33, and nearly the half of them, or 15, are common both to the British Isles and to America. Of the lower families nearly all the registered species are common to both continents.

It would be an interesting question for botanical geographers to solve, viz. whether or not there be as many British plants in an equal area of Independent Tartary as there are in the small section of Upper Canada of which a botanical list is given in the 'Canadian Naturalist' now before us. The question is—Are there as many British plants as one-fourth or one-fifth of the entire vegetation in the district round the Sea of Aral, and in the countries known by the names of Turkistan and Bucharia? This tract is about as far east as the basin of the Ottawa is west of London. In solving the question about the migration of plants westward, as the great wave of population has flowed from the east to the west, it should be taken into consideration that land is almost continuous from Asia through Europe from east to west, or *vice versâ*, while between Europe and America the continuity is interrupted by the Atlantic Ocean.

This would probably be productive of more interesting and more practical results than the futile attempts to assign geographical limits to objects which are as liable to change in their relations as the earth's surface, which is altered by the increase of population, migrations of people, and the like. The idle disputes

about the nativity of plants will continue to serve as stimulants to pigmy intellects, and even be amusements to minds of a higher order and more catholic tendencies, till the subject is treated in a general, comprehensive, and philosophical manner. Then the geography of plants, like other departments of physical geography, will be studied in a way worthy of its importance, and divested of what renders it both repulsive and ridiculous; the abortive attempts to classify species into natives, denizens, colonists, etc., will be superseded by investigations founded on facts, not on baseless assumptions.

It is gratifying to know that our British Isles are not like thankless recipients, scapegraces who take and give nothing in return. For the ornamental *Mimulus luteus*, *Œnothera biennis*, *Diervilla trifida*, etc., we have sent to America the useful Timothy-grass, *Phleum pratense*, Dandelion, and Hound's-tongue, with several things for which the colonists will not thank us, such as Thistles, Buttercups, etc.

The Vegetable Kingdom is not exempted from the general law to which all created things must submit, viz. that of continuous change.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Botanical Society of Canada.

An extra meeting of the Society, called for the purpose of disposing of an accumulation of interesting papers, was held on Thursday evening, 28th March. There was a full attendance of members and subscribers. The Very Rev. Principal Leitch, President, occupied the chair. Letters were read from Sir William Hooker, K.H., Director of the Royal Gardens, Kew, and from Dr. J. H. Balfour, Professor of Botany in the Edinburgh University.

The following communications were read:—

1. Suggestions for Observations to be made by the Members of the Botanical Society of Canada, during the ensuing summer, with reference to a Colonial Flora, proposed to be published by the British Government. By Sir William J. Hooker, K.H., Director of the Royal Gardens, Kew, in a letter to Professor Lawson. Botanists will be gratified to hear that a series of Colonial Floras are in preparation, and one of them, that of Hongkong, is published. We have not room for the letter sent to the Secretary by Sir W. J. Hooker on the interesting subject of a new Canadian Flora, which will be a welcome addition to our literature. On the motion of Judge Logie, of Hamilton, seconded by Andrew Drummond, Esq., of the Montreal Bank, the Society's thanks were voted to Sir William Hooker, and the Secretary was requested to communicate to him the desire of the

Society to aid in every possible way in carrying out his wishes, and especially in forwarding the important object of a Canadian Flora.

2. On the Fibre of *Asclepias incarnata*. By Judge Logie, of Hamilton. An interesting series of specimens, showing the fibre in various stages of preparation, etc., were shown.

3. On the Flora of Hamilton and its vicinity. By Judge Logie. On the motion of Dr. Dickson, a cordial vote of thanks was accorded to Judge Logie.

4. On the History, Properties, and Cultivation of Cotton. By F. R. Stanton. Communicated by Dr. H. Yates. Mr. Briggs moved a vote of thanks, which was warmly accorded.

5. List of Plants observed in the Neighbourhood of Prescott, C. W., chiefly in 1860. By B. Billings, Jun., F.B.S. Thanks were voted and the paper ordered to be printed in the Society's Annals.

6. On the Sugar Maple, and the Preparation of Sugar, and Saccharine Solutions from Maple Sap. By John May, B.A. Dr. Lavell moved a vote of thanks, which was seconded by Mr. Paton, and given with applause.

7. Notices of the Effects of Frost on Vegetation in Britain during the present winter, in letters from Professor Balfour and Dr. John Lowe, to the Secretary.

The above communications will show that this new Society does not neglect the one thing needful in these our days, viz. utility.

Shamrock.—Clover (*Trifolium repens*).

"*To live in Clover.*"—I think it is now generally agreed that the true Shamrock which St. Patrick gathered to illustrate the doctrine of the Trinity was the *Trifolium repens* (white Clover), although some of the contributors to the 'Phytologist' have supposed the *Oxalis Acetosella* to have been the saint's plant. It is nevertheless true that the *Irishman* gives his patron saint the credit of having selected the *Clover*, as he wears a piece of this plant in his hat, or in the button-hole of his coat, on the *saint's day* (17th March). There is an expression often used by us, "To live in clover," or "To be in clover," and Webster, in his dictionary, says, "To live in clover is to *live luxuriantly or in abundance*, a phrase borrowed from the luxuriant growth of clover, and the feeding of cattle in clover." But I think this definition is not quite satisfactory. I find in reading 'Euphues and his England,' where he speaks of fidelity, the following:—"For as safe being it is in the companie of a trustie mate, as *sleeping* in the grass *Trifole*, where there is no serpent so venemous as dare venture." From this I should be inclined to conclude that "to live in clover," or "to be in clover," originally meant a state of security or safety, rather than a state of luxuriance. But it is worth remarking that the word clover is derived from the Dutch *claver*, and this word signifies a club,—hence claver or *clubgrass*. Most of the clovers when in bloom are club-shaped; but is there any analogy between the *club* and the idea of *safety?*—if so, we might in support of this refer to the accounts which history relates of the exploits of Hercules with *his club*, and the general use of the *club* in early times of warfare. The club was also the origin of the sceptre as a badge of royalty.

S. B.

Herbaria.

Sale of the Herbaria of the late Mr. J. D. Salmon, F.L.S.

1. The Flora of Surrey, in six portfolios, all named and arranged in painted deal case, with MS. district catalogues and map, £4. 15*s*.
2. The Flora of Godalming, named, and arranged in six portfolios, £1. 7*s*.
3. Four parcels of plants, Surrey, Essex, and Kent, 12*s*.
4. Two parcels of British Lichens, Mosses, etc., 7*s*.
5. Parcel of Swiss plants and ditto of Musci, from the Alps, 3*s*.
7. Duplicate plants, *ex Herb.* W. H. Campbell, Edinburgh, and W. Gourlie, Jun., Glasgow; in thirty-five brown-paper parcels, £1. 15*s*.
8. Surrey plants, *ex Herb.* Walter Reeves, Farnham, three parcels, 3*s*.
9. Musci, named, two parcels, £1. 1*s*.
10. Ditto, not named, two parcels, 6*s*.
11. Ditto, named, three parcels, *ex Herb.* Wm. Gourlie, Jun., Glasgow, 14*s*.
12. Lichens, named, three parcels, ditto, £1. 4*s*.
13. Cryptogamia, named, Hepaticæ and foreign Musci, three parcels, ditto, 14*s*.
14. Algæ, *ex Herb.* W. H. Campbell, Edinburgh, two parcels, 13*s*.
15. Miscellaneous plants, etc., six parcels, 4*s*.
17. Box containing Ferns, Grasses, etc., 4*s*.
18. British duplicates, flowering and cryptogamic, partly named, ten thick parcels, 15*s*.
19. British herbarium, about 1000 species, named and localized, 300 mounted on demy cartridge paper, many collected by Balfour, Syme, and other well-known botanists, £1. 11*s*.
20. European and other exotic plants, mostly named, five parcels, 9*s*.
21. One hundred rare British plants, 10*s*.
22. Good collection of British Ferns, 4*s*.
23. Parcel of dried plants, 6*s*.
24. A collection of British Grasses, about 110 species, named and mounted, 12*s*.
25. A collection of British and European Carices, 100 species, named, localized, and mounted, 16*s*.
26. A collection of British Mosses (about 200), in three cases, named and neatly mounted, £1. 8*s*.
27. Two large bundles of British and European plants, from various localities, 8*s*.

The interesting lots, No. 1, No. 2, and No. 19, deserve a remark.

The first lot consisted of specimens that had been selected from a general herbarium of British specimens; and they were the finest obtainable, in the best possible condition, and very neatly mounted as described. Surely somewhat less than five pounds was a very low price for this collection. The paper on which they were mounted cost nearly double the sum at which they were sold.

The next lot, viz. the specimens illustrating the Flora of Godalming, were also in an excellent condition, but mounted on a paper of smaller dimensions. It is to be wished that this excellent collection may be transferred to the custody of the Guildford Institute, or to that of Godalming, if this wealthy town has such an institution.

The nineteenth lot, as above said, was the original collection from which the Flora of Surrey was selected. This set contained excellent plants, and was sold very cheap—at less than three shillings a hundred.

It is not desirable that dried plants should command a ready and remunerative sale; for if they did, most of our rare plants would speedily be extirpated. Upon the whole, it is better for scientific purposes that they should bear a high value in the eye of the possessor, but should fetch only a nominal price when submitted to public competition.

A New Use for Apples.

We are threatened with a cider famine, not from the failure of the apples, although a partial crop, but because they are likely to be applied to a more profitable purpose (so far as the growers are concerned) than in making a household beverage. It seems that the Manchester calico dyers and printers have discovered that apple juices supply a desideratum long wanted in making fast colours for their printed cottons, and numbers have been into Devonshire and the lower parts of Somersetshire buying up all the apples they can get, and giving such a price for them as in the dearest years hitherto known has not been offered. We know of one farmer in Devonshire who has a large orchard, for the produce of which he never before received more than £250, and yet he has sold it this year to a Manchester man for £360. There can be no doubt that the discovery will create quite a revolution in the apple trade.—*From the 'Times,' October* 1, 1861.

Devonshire, September 27th, 1861.—The quantity of cider is not likely to be so great this year as formerly, in consequence of the sale of many orchards to manufacturers, who are about, it is said, to use the juice in some colouring processes.—*From the 'Times,' September 30th*, 1861.

Dr. Torrey's Herbarium.

Through the 'American Medical Times,' we learn that Dr. Torrey has presented "his immense *herbarium*, the fruit of forty years' assiduous labour, together with his valuable botanical library," to the trustees of Columbia College, who have provided accommodation for them, and also a residence for Dr. Torrey, in the College. This collection is said to embrace examples of nearly all the collections of Government expeditions, from that of 1819, under Major Long, to the recent results. Besides, the collection embraces numerous specimens from the Floras of Europe, Asia, Australia, and South Africa. Dr. Torrey does not propose abandoning his botanical pursuits; but hopes, under the auspices of the College, to prosecute them under more favourable circumstances.

Scrophularia vernalis.

This interesting plant was known as British at an earlier date than we are generally disposed to assign to it. Sir J. E. Smith, who worked up the origin of our British Flora with scrupulous care, seems to have overlooked the earliest record of this plant, as I perceive by a manuscript note in my copy of Smith's 'English Flora,' as follows:—Sir James says, vol. iii. p. 139, "Neither Dillenius nor Ray takes notice of this species." My annotated copy of the 'English Flora' adds,—"but William How does." See 'Phytologia Britannica,' p. 110 (Lond. 1650), under the old name, *Lamium Pannonicum aliud*, Clusius. W. P.

Crepis biennis.

A friendly critic has pointed out a slight inaccuracy in a notice of Kentish plants, p. 207, vol. v. Instead of writing, "and in 'English Botany,' both in the original work and in the Supplement," it should have been "in 'English Botany,' and the confusion of the two species is admitted in the supplement to that valuable work."—See *Crepis taraxacifolia*, E. B. S. 2929.

Cinclidium stygium.

Sir C. Bunbury, Bart., exhibited a specimen of *Cinclidium stygium*, a rare Moss, discovered on Tuddenham Heath, near Mildenhall, in November last, by Mr. Edmund Skepper, a zealous and intelligent botanist of Bury St. Edmund's. This Moss is new to the Flora of Suffolk. Tuddenham Heath was long since noted as the locality of several rare plants, and especially of *Liparis Læselii.—From the 'Gardeners' Chronicle' of December* 15, 1860.

Addenda to the List of Oxfordshire Mosses.

The *Bryum pallescens*, near Parktown, proves on closer examination to be *B. uliginosum*, with the operculum larger and less oblique than usual. Fruit, July.

Bryum inclinatum was accidentally omitted. One large tuft grew on a decayed Willow, near Sparsey Bridge. Fruit, June. H. Boswell.

Oxford, August 5, 1861.

Verbascum thapsiforme.

Some readers of the 'Phytologist' have heard from private sources that this rare British Verbascum was discovered last August not far from Ashford, Kent. A correspondent has promised to supply a detailed notice of the history, relations, and recent discovery of this species; and it is hoped that his account will appear in the next monthly issue.

Othello, Act 1, Scene 3.—*Iago to Roderigo* (speaking of Othello): "These Moors are changeable in their wills: fill thy purse with money. The food that to him now is as *luscious as Locusts*, shall be to him shortly as bitter as *Coloquintida*."

Communications have been received from

W. Pamplin; John Sim; Sidney Beisly; H. Beisly; W. P.; C. J. Ashfield; T. R. A. Briggs; W. Winter; T. Stansfield; W. Marshall; W. Richardson; the Rev. G. Mackfarlane; H. C.; W. Richardson, jun.; J. S. M.; Rev. R. H. Webb.

BOOKS, ETC., RECEIVED FOR REVIEW.

The Queen, September 14.

The Canadian Naturalist and Geologist, for February, April, June, and August.

Cleghorn's Forests and Gardens of South India.

The Todmorden Post, October 12*th.*

ERRATA.

Page 297, line 10 from bottom, for γ. *spicata*, read *F. (Fumaria) spicata.*
Page 299, line 10, for *concisely* read *copiously*; line 15, for *digitalis* read *segetalis.*
Page 300, line 25, for *Rhine* read *Rhone.*

3 AP 62

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F. Y. BROCAS having recently returned from the above District and its Vicinity, where he has made some extensive BOTANICAL COLLECTIONS, begs to inform those who kindly subscribed to assist him in his expenses, that their Sets will shortly be ready. Those who have not already subscribed, but are desirous of possessing Collections of the above North Wales Plants, will oblige by making early application: also those who may wish Sets of the ARCTIC PLANTS previously advertised, as there are few remaining.

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